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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,452

04/13/2004

James L. Hendrix

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28584

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10/02/2006

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/823,452	Applicant(s) HENDRIX ET AL.	
	Examiner Michael P. Stafira	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
4a) Of the above claim(s) 45-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/13/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Claims 45-47 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group II, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on July 21, 2006.

2. Applicant's election without traverse of Group I in the reply filed on July 21, 2006 is acknowledged.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23-44 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Merely analyzing a signal would not appear to be sufficient to constitute a tangible result, since the outcome of the analyzing step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. See OG Notices; 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility". The dependent claims are also rejected because they hold the same deficiencies as the rejected independent claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 23, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by DeBaryshe et al. ('364).

Claim 1, 23

DeBaryshe et al. ('364) discloses an illumination source that generates a probe beam (Fig. 8, Ref. 812, 813); a series of optical components (See Fig. 8) that cause a portion of the probe beam to be reflected by a measurement area on the sample surface and subsequently transported to a detector (Fig. 8, Ref. 831), where the series of optical components includes at least one mirror (Fig. 8, Ref. 826, 834)(off-axis parabolic mirror Col. 34, lines 6-12, which would meet applicant's conditions for a highly reflective optical element); and a processor (Fig. 8, Ref. Computer) for analyzing signals generated by the detector (Fig. 8, Ref. 829)(See Abstract).

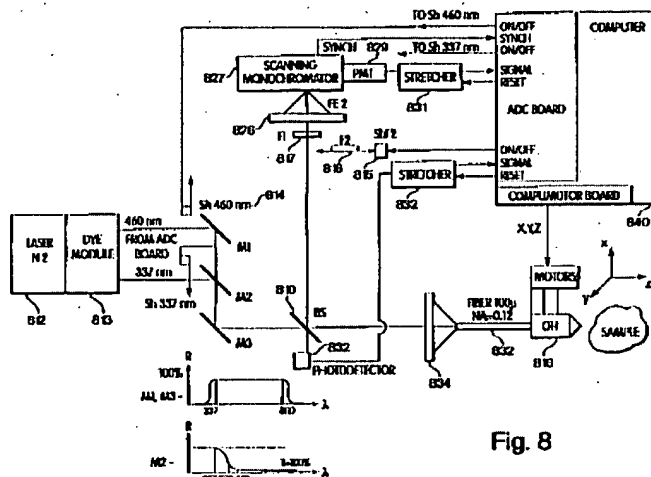


Fig. 8

Claim 2, 24

DeBaryshe et al. ('364) discloses further discloses an off-axis parabolic mirror that monotonically decreasing function of diameter (Fig. 8, Ref. 826, 834).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Krisko et al. ('642).

Claim 3, 25

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the mirror is made of a glass substrate and a reflective coating. Krisko et al. ('642) shows that it is known to provide a mirror made of glass substrate and a reflective coating (Col. 2-3,

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lines 62-1) for a bendable type of mirror. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the glass substrate and reflective coating of Krisko et al. ('642) for the purpose of providing a mirror that is heat-formable which allows it to be configured into a curved mirror, therefore eliminating significant damage to the reflective coating.

8. Claims 4, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of McCandless ('414).

Claim 4, 26

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the mirror is formed using a glass master. McCandless ('414) shows that it is known to provide a glass master (Fig. 1, Ref. 20) for forming a mirror (Col. 3, lines 12-26) for an apparatus for replicating optical components. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the glass master of McCandless ('414) for the purpose of providing replicating multiple optical components with superior wear surfaces, therefore improving the release characteristics during replication processes.

9. Claims 5, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Schaefer ('177).

Claim 5, 27

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an the mirror is formed using diamond turning and polishing the surface to approximately 10 Angstroms RMS. Schaefer ('177) shows that it is known to provide a mirror by diamond

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turning and polishing it to around 10 Angstroms RMS (Col. 3, lines 10-13)(Col. 5, lines 24-27) for a method of making a high precision mirror. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the diamond turning and polishing of Schaefer ('177) for the purpose of providing a surface finish that provides adequately low scatter, therefore providing reflected radiation of interest having a relatively long wavelength.

10. Claims 6, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Folta et al. ('760).

Claim 6, 28

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an aluminum substrate and super polishing the substrate. Folta et al. ('760) shows that it is known to provide an aluminum substrate that is superiorly polished (Col. 4, lines 12-38) for a low cost production of optical mirrors. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the aluminum substrate of Folta et al. ('760) for the purpose of providing a method of making a mirror substrate using an inexpensive fabrication technique therefore reducing the cost of an overall optical system.

11. Claims 7, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by DeBaryshe et al. ('364).

Claim 7, 29

DeBaryshe et al. ('364) discloses an illumination source that generates a probe beam (Fig. 8, Ref. 812, 813); a series of optical components (See Fig. 8) that cause a portion of the



Claim 8, 30

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the mirror is made of a glass substrate and a reflective coating. Krisko et al. ('642) shows that it is known to provide a mirror made of glass substrate and a reflective coating (Col. 2-3, lines 62-1) for a bendable type of mirror. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the glass substrate and reflective coating of Krisko et al. ('642) for

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the purpose of providing a mirror that is heat-formable which allows it to be configured into a curved mirror, therefore eliminating significant damage to the reflective coating.

13. Claims 9, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of McCandless ('414).

Claim 9, 31

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the mirror is formed using a glass master. McCandless ('414) shows that it is known to provide a glass master (Fig. 1, Ref. 20) for forming a mirror (Col. 3, lines 12-26) for an apparatus for replicating optical components. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the glass master of McCandless ('414) for the purpose of providing replicating multiple optical components with superior wear surfaces, therefore improving the release characteristics during replication processes.

14. Claims 10, 11, 32, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Schaefer ('177).

Claim 10, 32

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an the mirror is formed using diamond turning and polishing the surface to approximately 10 Angstroms RMS. Schaefer ('177) shows that it is known to provide a mirror by diamond turning and polishing it to around 10 Angstroms RMS (Col. 3, lines 10-13)(Col. 5, lines 24-27) for a method of making a high precision mirror. It would have been obvious to combine the

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device of DeBaryshe et al. ('364) with the diamond turning and polishing of Schaefer ('177) for the purpose of providing a surface finish that provides adequately low scatter, therefore providing reflected radiation of interest having a relatively long wavelength.

Claim 11, 33

DeBaryshe et al. ('364) discloses further discloses an off-axis parabolic mirror that monotonically decreasing function of diameter (Fig. 8, Ref. 826, 834).

15. Claims 12, 13, 34, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Folta et al. ('760).

Claim 12, 34

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an aluminum substrate and super polishing the substrate. Folta et al. ('760) shows that it is known to provide an aluminum substrate that is superiorly polished (Col. 4, lines 12-38) for a low cost production of optical mirrors. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the aluminum substrate of Folta et al. ('760) for the purpose of providing a method of making a mirror substrate using an inexpensive fabrication technique therefore reducing the cost of an overall optical system.

Claim 13, 35

DeBaryshe et al. ('364) discloses further discloses an off-axis parabolic mirror that monotonically decreasing function of diameter (Fig. 8, Ref. 826, 834).

16. Claims 14, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Rotter et al. ('991).

Claim 14, 36

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the measurement area is no larger than 50 microns. Rotter et al. ('991) shows that it is known to provide a measurement area no larger than 50 microns for a use of a probe beam from an ellipsometer. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the 50 micro measurement area of Rotter et al. ('991) for the purpose of providing a system for eliminating errors introduced into the data caused by a change in polarization state focused by the mirror and lens, therefore resulting in more light reaching the detector which increases the system throughput.

17. Claims 15, 37 are rejected under 35 U.S.C. 102(b) as being anticipated by DeBaryshe et al. ('364).

Claim 15, 37

DeBaryshe et al. ('364) discloses an illumination source that generates a probe beam (Fig. 8, Ref. 812, 813); a series of optical components (See Fig. 8) that cause a portion of the probe beam to be reflected by a measurement area on the sample surface and subsequently transported to a detector (Fig. 8, Ref. 826, 834)(off-axis parabolic mirror Col. 34, lines 6-12, which would meet applicant's conditions for a highly reflective optical element), the series of optical components include at least one mirror (Fig. 8, Ref. 826, 834); and a processor (Fig. 8, Ref. Computer) for analyzing signals generated by the detector (Fig. 8, Ref. 829)(See Abstract).

19. Claims 17, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of McCandless ('414).

Claim 17, 39

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the mirror is formed using a glass master. McCandless ('414) shows that it is known to provide a glass master (Fig. 1, Ref. 20) for forming a mirror (Col. 3, lines 12-26) for an apparatus for replicating optical components. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the glass master of McCandless ('414) for the purpose of providing replicating multiple optical components with superior wear surfaces, therefore improving the release characteristics during replication processes.

20. Claims 18, 19, 40, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Schaefer ('177).

Claim 18, 40

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an the mirror is formed using diamond turning and polishing the surface to approximately 10 Angstroms RMS. Schaefer ('177) shows that it is known to provide a mirror by diamond turning and polishing it to around 10 Angstroms RMS (Col. 3, lines 10-13)(Col. 5, lines 24-27) for a method of making a high precision mirror. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the diamond turning and polishing of Schaefer ('177) for the purpose of providing a surface finish that provides adequately low scatter, therefore providing reflected radiation of interest having a relatively long wavelength.

Claim 19, 41

DeBaryshe et al. ('364) discloses further discloses an off-axis parabolic mirror that monotonically decreasing function of diameter (Fig. 8, Ref. 826, 834).

21. Claims 20, 21, 42, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Folta et al. ('760).

Claim 20, 42

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show an aluminum substrate and super polishing the substrate. Folta et al. ('760) shows that it is known to provide an aluminum substrate that is superiorly polished (Col. 4, lines 12-38) for a low cost production of optical mirrors. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the aluminum substrate of Folta et al. ('760) for the purpose of providing a method of making a mirror substrate using an inexpensive fabrication technique therefore reducing the cost of an overall optical system.

Claim 21, 43

DeBaryshe et al. ('364) discloses further discloses an off-axis parabolic mirror that monotonically decreasing function of diameter (Fig. 8, Ref. 826, 834).

22. Claims 22, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBaryshe et al. ('364) in view of Rotter et al. ('991).

Claim 22, 44

DeBaryshe et al. ('364) substantially teaches the claimed invention except that it does not show the measurement area is no larger than 50 microns. Rotter et al. ('991) shows that it is

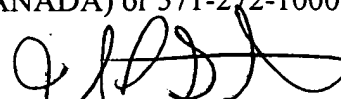
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known to provide a measurement area no larger than 50 microns for a use of a probe beam from an ellipsometer. It would have been obvious to combine the device of DeBaryshe et al. ('364) with the 50 micro measurement area of Rotter et al. ('991) for the purpose of providing a system for eliminating errors introduced into the data caused by a change in polarization state focused by the mirror and lens, therefore resulting in more light reaching the detector which increases the system throughput.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael P. Stafira

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Primary Examiner
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September 22, 2006